

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A process for preparing rigid urethane-modified polyisocyanurate foam comprising the step of reacting an organic polyisocyanate with a polyfunctional isocyanate-reactive component comprising at least 30 wt % of polyester polyols in the presence of a blowing agent other than a blowing agent comprising halocarbon, a urethane catalyst, and a metal salt trimerisation catalyst characterized in that the process is carried out in the presence of a carboxylic acid and wherein the blowing agent is: (a) water, (b) a hydrocarbon, or (c) a mixture of water, hydrocarbon, and hydrofluorocarbon, (d) a mixture of water and hydrocarbon, or (e) a mixture of hydrocarbon and hydrofluorocarbon, wherein the urethane catalyst is used in an amount ranging from 0.1 to 3.5 % by weight based on the isocyanate-reactive component and the metal salt trimerisation catalyst is used in an amount ranging from 0.4 to 4.5 % by weight based on the isocyanate-reactive component.
2. (Original) The process according to claim 1 wherein the carboxylic acid has a molecular weight below 250.
3. (Original) The process according to claim 1 wherein the carboxylic acid has a pKa value in water of between 1 and 5.5.
4. (Original) The process according to claim 2 wherein the carboxylic acid has a pKa value in water of between 1 and 5.5.
5. (Original) The process according to claim 1 wherein the carboxylic acid is functionalised with at least one additional OH, COOH, SH, NH₂, NHR, NO₂ or halogen functional group, wherein R is an alkyl, cycloalkyl or aryl group.
6. (Original) The process according to claim 2 wherein the carboxylic acid is functionalised with at least one additional OH, COOH, SH, NH₂, NHR, NO₂ or halogen functional group, wherein R is an alkyl, cycloalkyl or aryl group.

7. (Original) The process according to claim 3 wherein the carboxylic acid is functionalised with at least one additional OH, COOH, SH, NH₂, NHR, NO₂ or halogen functional group, wherein R is an alkyl, cycloalkyl or aryl group.
8. (Original) The process according to claim 4 wherein the carboxylic acid is functionalised with at least one additional OH, COOH, SH, NH₂, NHR, NO₂ or halogen functional group, wherein R is an alkyl, cycloalkyl or aryl group.
9. (Original) The process according to claim 5 wherein the carboxylic acid is functionalised in α or β position with respect to the carboxyl group.
10. (Original) The process according to claim 6 wherein the carboxylic acid is functionalised in α or β position with respect to the carboxyl group.
11. (Original) The process according to claim 9 wherein said functionalised carboxylic acid corresponds to the general formula X_n - R' - COOH wherein X is OH, COOH, SH, NH₂, NHR, NO₂ or halogen, R' is an at least divalent hydrocarbon moiety, n is an integer having a value of at least 1 and allows for mono and polyfunctional substitution on the hydrocarbon moiety.
12. (Original) The process according to claim 10 wherein said functionalised carboxylic acid corresponds to the general formula X_n - R' - COOH wherein X is OH, COOH, SH, NH₂, NHR, NO₂ or halogen, R' is an at least divalent hydrocarbon moiety, n is an integer having a value of at least 1 and allows for mono and polyfunctional substitution on the hydrocarbon moiety.
13. (Original) The process according to claim 11 wherein X is OH or COOH, n is 1 and R' is a linear or branched aliphatic or aromatic hydrocarbon having 2 to 6 carbon atoms.
14. (Original) The process according to claim 12 wherein X is OH or COOH, n is 1 and R' is a linear or branched aliphatic or aromatic hydrocarbon having 2 to 6 carbon atoms.

15. (Original) The process according to claim 1 wherein said carboxylic acid is lactic acid, salicylic acid, maleic acid, acetic acid, or malic acid.
16. (Original) The process according to claim 2 wherein said carboxylic acid is lactic acid, salicylic acid, maleic acid, acetic acid, or malic acid.
17. (Original) The process according to claim 11 wherein said carboxylic acid is lactic acid, salicylic acid, maleic acid, acetic acid ,or malic acid.
18. (Original) The process according to claim 1 wherein said carboxylic acid is used in an amount ranging from 0.05 to 5 % by weight based on the isocyanate-reactive component.
19. (Original) The process according to claim 2 wherein said carboxylic acid is used in an amount ranging from 0.05 to 5 % by weight based on the isocyanate-reactive component.
20. (Cancelled)
21. (Cancelled)
22. (Previously Presented) The process according to claim 1 wherein the metal salt trimerisation catalyst is an alkali metal salt of an organic carboxylic acid.
23. (Previously Presented) The process according to claim 2 wherein the metal salt trimerisation catalyst is an alkali metal salt of an organic carboxylic acid.
24. (Original) The process according to claim 23 wherein the metal salt trimerisation catalyst is potassium acetate or potassium 2-ethylhexanoate.
25. (Cancelled)
26. (Original) The process according to claim 1 wherein the reaction is carried out at an isocyanate index of 150 to 450 %.
27. (Cancelled)

28. (Currently Amended) A rigid urethane-modified polyisocyanurate foam obtained by reacting an organic polyisocyanate with a polyfunctional isocyanate-reactive component comprising at least 30 wt % of polyester polyols in the presence of a blowing agent other than a blowing agent comprising halocarbon, a urethane catalyst, and a metal salt trimerisation catalyst characterized in that the reaction is carried out in the presence of a carboxylic acid and wherein the blowing agent is: (a) water, (b) a hydrocarbon, or (c) ~~a mixture of water, hydrocarbon, and hydrofluorocarbon, (d) a mixture of water and hydrocarbon, or (e) a mixture of hydrocarbon and hydrofluorocarbon~~, wherein the urethane catalyst is used in an amount ranging from 0.1 to 3.5 % by weight based on the isocyanate-reactive component and the metal salt trimerisation catalyst is used in an amount ranging from 0.4 to 4.5 % by weight based on the isocyanate-reactive component.

29. (Cancelled)

30. (Currently Amended) A process for preparing rigid urethane-modified polyisocyanurate foam comprising the step of reacting an organic polyisocyanate with a polyfunctional isocyanate-reactive component comprising at least 30 wt % of polyester polyols in the presence of a blowing agent other than a blowing agent comprising halocarbon, and a metal salt trimerisation catalyst characterized in that the process is carried out in the presence of a carboxylic acid and wherein the blowing agent consists of water, and the metal salt trimerisation catalyst is used in an amount ranging from 0.5 to 5 % by weight based on the isocyanate-reactive component.

31. (Previously Presented) The process according to claim 30 wherein the water is present in an amount less than 1 % by weight based on the isocyanate-reactive component.